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PORT DOCUMENTATION PAGE

1a

AD-A198 591

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2a

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3. DISTRIBUTION / AVAILABILITY OF REPORT
Approved for public release: distribution unlimited

4. PERFORMING ORGANIZATION REPORT NUMBER(S)
55

5. MONITORING ORGANIZATION REPORT NU

DTIC ELECTE SEP 16 1988 S D

6a. NAME OF PERFORMING ORGANIZATION	6b. OFFICE SYMBOL (If applicable)	7a. NAME OF MONITORING ORG.
University of Arizona		Office of Naval Rese

6c. ADDRESS (City, State, and ZIP Code)	7b. ADDRESS (City, State, and ZIP Coo
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8a. NAME OF FUNDING / SPONSORING ORGANIZATION	8b. OFFICE SYMBOL (If applicable)	9. PROCUREMENT INSTRUMENT IDENTIFICATION NUMBER
Office of Naval Research		N00014-86-K-0316

8c. ADDRESS (City, State, and ZIP Code)	10. SOURCE OF FUNDING NUMBERS			
	PROGRAM ELEMENT NO.	PROJECT NO.	TASK NO.	WORK UNIT ACCESSION NO

11. TITLE (Include Security Classification)
"A Revolution in Optical Spectroscopy - High Performance Array Detectors"

12. PERSONAL AUTHOR(S)
M. Bonner Denton

13a. TYPE OF REPORT	13b. TIME COVERED	14. DATE OF REPORT (Year, Month, Day)	15. PAGE COUNT
Technical	FROM 5/15/86 TO 4/30/89	February 4, 1988	

16. SUPPLEMENTARY NOTATION
Prepared for presentation at the ACS 194th National Meeting, New Orleans, Louisiana, August 30-September 4, 1987

17. COSATI CODES			18. SUBJECT TERMS (Continue on reverse if necessary and identify by block number)
FIELD	GROUP	SUB-GROUP	multichannel detectors, charge injection detectors, charge transfer devices, electro-optical performance

19. ABSTRACT (Continue on reverse if necessary and identify by block number)

Recent investigations will be presented which demonstrate how new types of charge transfer device (CTD) array detectors can provide vastly superior performance to conventional approaches in a variety of optical spectroscopic applications. Operational characteristics of the two major classes of CTD's - charge coupled devices (CCD) and charge injection devices (CID) - will be briefly reviewed. Examples demonstrating the "trade-offs" between the two classes of CTD's and their relative merits will be presented. Entirely new spectroscopic frontiers such as the "Intelligent Atomic Emission Spectrometer" will be discussed.

The ability to employ the vast amount of data available real time from a properly configured array detector can offer major advances in precision and accuracy. The concepts behind this approach, along with the advantages, will be presented.

20. DISTRIBUTION / AVAILABILITY OF ABSTRACT	21. ABSTRACT SECURITY CLASSIFICATION
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M. Bonner Denton	(602) 621-6352	

DD FORM 1473, 84 MAR

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Contract N00014-86-K-0316

R&T Code 4131012---03

Technical Report No. 55

A Revolution in Optical Spectroscopy - High Performance Array Detectors

by

M. Bonner Denton

Prepared for Presentation at the
ACS 194th National Meeting
New Orleans, Louisiana
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Department of Chemistry
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February 4, 1988

A REVOLUTION IN OPTICAL SPECTROSCOPY - HIGH PERFORMANCE ARRAY DETECTORS

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Index Headings: Multichannel detectors, charge injection detectors, charge transfer devices, electro-optical performance

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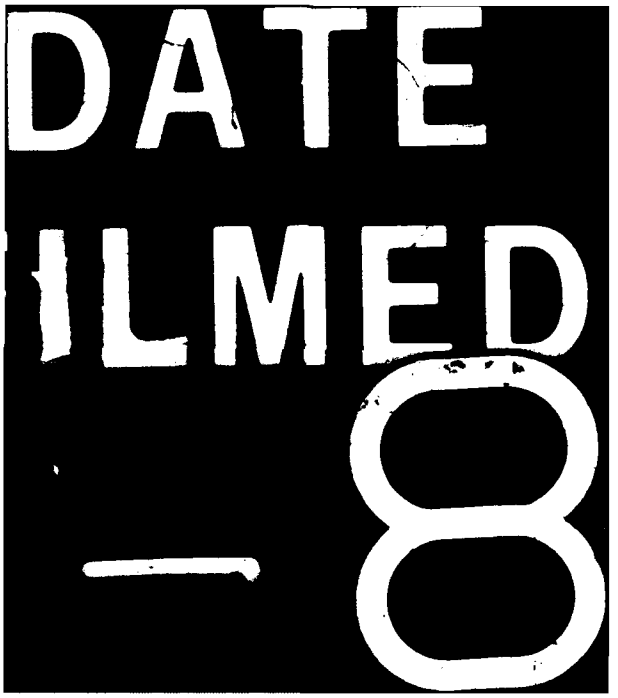
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